NOVOZHILOV, M.G., doktor tekhn. nauk; DRUKOVANYY, M.F., kand. tekhn. nauk; TARTAKOVSKIY, B.N., kand. tekhn. nauk; YEFREMOV, E.K., kand. tekhn. nauk; IL'IN, V.I., inzh.; GAVRILYUK, I.I., inzh.

Use of high benches in flux quarries. Vzryv. delo no.57/14: 167-173 '65. (MIRA 18:11)

Filial Instituta mekhaniki AN UkrSSR.

VASIL'YEV, V.S.; IL'IN, V.K.; MINAYEV-TSIKANOVSKIY, V.A.; PERUPELITSIN, V.I., redaktor; RACHEVSKAYA, M.I., redaktor; GUROVA, O.A., tekhnicheskiy redaktor

[Construction and operation of laundry equipment] Konstruktsii i ekspluatatsiia prachechnogo oborudovaniia. Moskva, Izd-vo Ministerstva kommunal'nogo khoziaistva RSFSR, 1954. 218 p. (MLRA 8:4)
(Laundry machinery)

Il'in, Viktor Konstantinovich

IL'IN, Viktor Konstantinovich; MINAYEV-TSIKANOVSKIY, Viktor Aleksandrovich; SHVEDOV, Yu.F., red.; KHRISTENKO, V.P., red.izdatel'stva; KONYASHINA, A.D., tekhn.red.

[Mechanized laundries; principles of technical design and the equipment of mechanized laundries] Mekhanicheskie prachechnye; osnovy tekhnologicheskogo proektirovaniia i oborudovanie mekhanicheskikh prachechnykh. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1957. 245 p. (MIRA 10:12)

(Laundries)

IL'IN, V.K.; VASIL'YEV, V.S. [deceased]; MAYEVSKIY, V.V.; KHOLSHCHEVNIKOV, Ye.N.; KIRKHGOF, A.G.; LOGVINOVICH, S.L.; ABRAMOV, G.M.; MINAYEV-TSIPANOVSKIY, V.A., red.; RACHEVSKAYA, M.I., red.izd-va; VOLKOV, S.V., tekhn.red.

[Laundry equipment album] Al'bom prachechnogo oborudovaniia. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1958. 119 p. (MIRA 12:7)

1. Akademiya Kommunal'nogo khozyaystva. Proyektno-konstruktorskoye byuro.
(Laundry machinery)

IL'IN, V.K.; NOVIKOV, A.I.; POLYANSKIY, S.V.; KARASIK, Ye.Ya.

The VST-1 pulse-time telemetering system. Biul.tekh.-ekon. inform. no.8:36-37 '59. (MIRA 13:1)
(Telemeter)

ACC NR: AP7002018 (A) SOURCE CODE: UR/0142/66/009/005/0610/0615

AUTHOR: Kulikov, E. L.; Il'in, V. K.

ORG: none

TITLE: New method of measuring line width of ferromagnetic resonance of ferrites

SOURCE: IVUZ. Radiotekhnika, v. 9, no. 5, 1966, 610-615

TOPIC TAGS: ferromagnetic resonance, ferrite

ABSTRACT: A thin-ferrite-plate-loaded waveguide segment is replaced by an equivalent quadripole (see figure), and formulas for the component impedances of the latter are derived by a variational method. Applied to the case of a ferrite-loaded rectangular waveguide terminated with a matched load, the above formulas permit deducing this expression for the width of ferrite resonance curve:

$$2\Delta H = \frac{4\pi M}{1+\left(\frac{H_\perp}{H_\parallel}\right)^2} \frac{d\frac{h}{b}\frac{2}{3}k}{\frac{|T_0|}{|T|}-1}.$$ The use of this formula presupposes a knowledge of the

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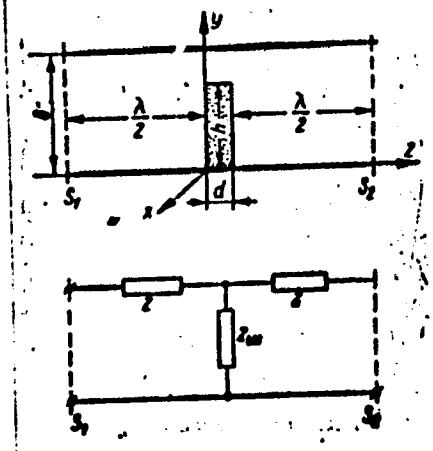
ACC NR: AP7002018



saturation magnetization $4\pi M$ and the factor $\gamma = \gamma_{sp} g/2$, where γ_{sp} = gyromagnetic ratio for electron spin and g - spectroscopic-split factor: the longitudinal-resonance constant magnetic field $H_{\parallel} = \omega/\gamma$. Actual measurements of 4 different-ferrite specimens have proved the validity of the above formula. Although the required measurement of $4\pi M$ and γ may be regarded as a shortcoming of the new method, these quantities have to be determined anyway in designing many ferrite-containing devices. Orig. art. has: 2 figures, 17 formulas, and 1 table.

SUB CODE: 09 SUBM DATE: 02Apr64 / ORIG REF: 009 / OTH REF: 002

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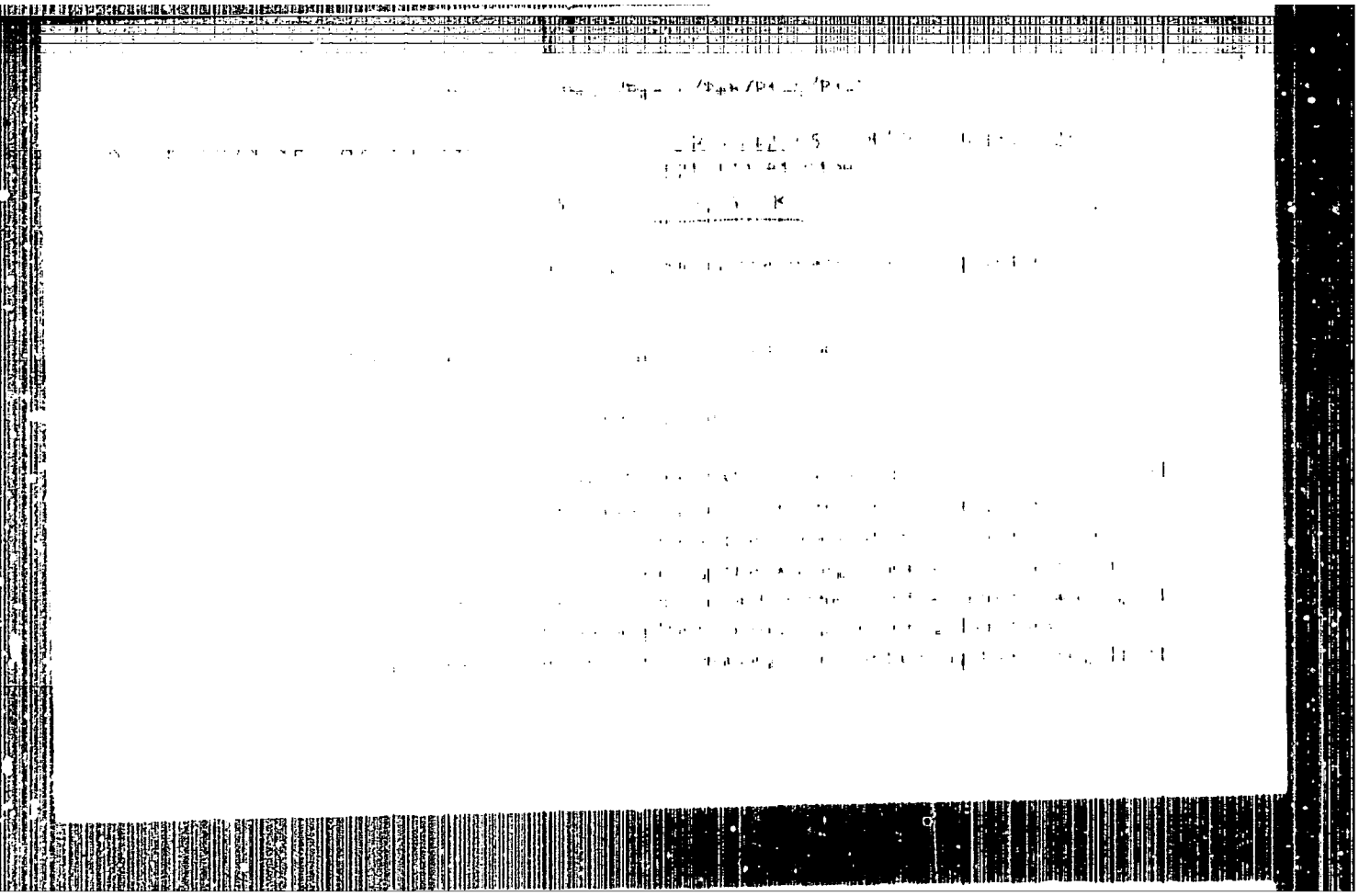

ASSOCIATION: none

SUBMITTED: 10Apr64 ENCL: 00 SUB CODE: EC

L 30985-66 EWT(m)/EWP(j)/T RPL WW/JW/JWD/WE/GS/RM

ACC NR: AT6004591 SOURCE CODE: UR/0000/65/000/000/0166/0172

AUTHOR: Il'in, V. K.; Korobova, M. N.; Finyagin, A. P.; Shakhov, Ye. A. 61

ORG: none 18 71

TITLE: Combustion of fuels containing organic phosphorus compounds

SOURCE: AN SSSR. Institut goryuchikh iskopayemykh. Novyye metody szhiganiya topliv i voprosy teorii goreniya (New methods in the combustion of fuels and problems in the theory of combustion). Moscow, Izd-vo Nauka, 1965, 166-172

TOPIC TAGS: combustion, phosphorus, phosphorus compound

ABSTRACT: The conditions were studied under which the combustion of a hydrocarbon fuel containing an organic phosphorus compound yields a maximum of P_4O_{10}. The experiments were conducted by analyzing the combustion products obtained with a hydrocarbon fuel containing either 9 or 30% phosphoric acid ester. A combustion chamber equipped with a fuel atomizer and a scrubber for the retention of combustion products was used. The experiments showed that the highest yield is obtained at an air excess factor of 1.2—1.5. The thermodynamics of reactions at various temperatures are discussed. The experiments are of interest for the combustion of compounds containing phosphorus and for the new methods used in phosphoric acid production. Orig art. has: 3 figures. [PV]

SUB CODE: 21 / SUBM DATE: 09Sep65/ ORIG REF: 004/ OTH REF: 003/ ATD PRESS: 4191

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AKHMEROV, A.Kh., kand.biol.nauk; BATENKO, A.I., kand.sel'skokhoz.nauk; BRUDASTOVA, M.A., kand.tekhn.nauk; GOLOVINSKAYA, K.A., kand.biolog. nauk; GORDON, L.M., kand.ekon.nauk; DOROKHOV, S.M., rybovod-biolog; YEROKHINA, L.V., rybovod-biolog; IL'IN, V.M., rybovod-biolog; ISAYEV, A.I., rybovod-biolog; KADZEVICH, G.V., rybovod-biolog; KOMAROVA, I.V., kand.biol.nauk; KRYMOVA, R.V., rybovod-biolog; KULAKOVA, A.M., rybovod-biolog; MAMONTOVA, L.I., kand.biol.nauk; MEYSNER, Ye.V., kand.biol.nauk; MIKHEYEV, P.V., kand.biol.nauk; MUKHINA, R.I., kand.biol.nauk; PAKHOMOV, S.P., kand.biol.nauk; SUKHOVERKHOV, F.M., kand.biol.nauk; SOKOLOVA, Z.P., rybovod-biolog; TSIUNCHIK, R.I., rybovod-biolog; RYZHENKO, M.I., red.; KOSOVA, O.N., red.; SOKOLOVA, L.A., tekhn.red.

[Handbook on pond fish culture] Spravochnik po prudovomu rybovodstvu. Red.kollegiia: A.I.Isaev i dr. Moskva, Pishchepromizdat, 1959. 374 p. (MIRA 13:4)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut prudovogo rybnogo khozyaystva.
(Fish culture)

IL'IN, V.M., inzhener.

Mechanization of concrete work in the new Stalin five-year plan. (MLRA 9:3)
Mekh.stroi. 4 no.1:4-5 Ja '47.

1. Gosplan SSSR.
(Concrete construction)

Il'in, V. M., ed.

Production cost in the construction industry and measures for decreasing it; collection of articles Moskva, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture, 1952. 172 p. (Snizhenie stoimosti stroitel'stva) (55-55763)

HD9715.R92S3

IL'IN, V.M., inzhener; ZENIN, P.A., inzhener.

Mechanization of coal loading from hoppers to railroad cars. Mekh. trud.rab.10 no.7:34-35 Jl '56. (MLRA 9:9)
(Loading and unloading)

MITIN, Sergey Andreyevich; IL'IN, V.M., redaktor; LEVKIN, B.P., redaktor; MASLOV, N.A., redaktor; OSPENSKIY, V.V., redaktor; CHERYAK, M.Ya., redaktor GOLERMAN, M.D. redaktor; GUSEVA.S.S.tekhnicheskiy redaktor.

[New wage system in construction work] Novye usloviia oplaty truda v stroitel'stve. Moskva, Gos.izd-vo lit-ry po stroit. i arkhit., 1957. 42 P. (MLRA 10:6)

(Wages)

IOMAS, Boris Yakovlevich; GUREVICH, M.S., red.; IL'IN, V.M., red.; LEYKIN, B.P., red.; MASLOV, N.A., red.; USPENSKIY, V.V., red.; CHERNYAK, M.Ya., red.; EL'KINA, E.M., tekhn.red.

[Basic aspects of the economics of construction; based on the experience and examples of housing construction] Osnovnye voprosy ekonomiki stroitel'stva; na opyte i primerakh zhilishchnogo stroitel'stva. Izd. 2-e, dop. Moskva, Gos. izd-vo lit-ry po stroit. i arkhit., 1957. 91 p. (MIRA 11:3)
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SYRTSOVA, Ye.D.; MIRKL'ZON, B.B.; L'IN, V.M., insh., red.; GERASIMOVA, G.S., red.izd-va, PRUSAKOVA, T.A., tekhn.red.; KORNEYEVA, V.I., tekhn.red.

[Analysis of labor productivity standards in building; a scientific report] Analiz urovnia proizvoditel'nosti truda v stroitel'stve; nauchnoe soobshchenie. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1958. 97 p. (MIRA 12:2)
(Building--Production standards) (Productivity accounting)

SEMENOV, I. Ya.; DUKEL'SKIY, D.S., red.; IL'IN, V.M., red.; MASLOV, N.A., red.; MALYUGIN, V.I., red.; USPENSKIY, V.V., red.; CHERNYAK, M.Ya., red.; SHASS, M.Ye.,red.; LAGUTINA, I.M.,tekhn. red.; EL'KINA, E.M.,tekhn. red.

[Working capital of the construction industry] Oborotnye sredstva v stroitel'stve. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1958. 107 p. (MIRA 11:12)
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GALKIN, Il'ya Grigor'yevich, kand.tekhn.nauk; USPENSKIY, V.V., red.; IL'IN, V.M., red.; MALYUGIN, V.I., red.; MASLOV, N.A., red.; CHERNYAK, M.Ya., red.; SHASS, M.Ye., red.; TARAYEVA, Ye.K., red.izd-va; STEPANOVA, E.S., tekhn.red.

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D'YACHKOV, Mikhail Fedorovich; LEYKIN, B.P., red.; ILL'IN, V.M., red.; MALYUGIN, V.I., red.; MASLOV, N.A., red.; USPENSKIY, V.V., red.; CHERNYAK, M.Ya., red.; SHASS, M.Ye., red.; MORSKOY, K.L., red. izd-va; TEMKINA, Ye.L., tekhn.red.

[Analysis of the administrative operations of contract building organizations; based on reports] Analiz khozisistvennoi deiatel'nosti podriadnykh stroitel'nykh organizatsii; po dannym otchetnosti. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam. 1960. 107 p. (MIRA 13:7)
(Construction industry)

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(Construction industry--Accounting)

IL'IN, Ivan Mikhaylovich; YUNGEROV, A.A., red.; IL'IN, V.M., red.; LEYKIN, B.P., red.; MALYUGIN, V.I., red.; MASLOV, M.A., red.; USPENSKIY, V.V., red.; SHASS, M.Ye., red.; KUTSKHOVA, A.A., red.izd-va; RYAZANOV, P.Ye., tekhn.red.

[Business accounting in building organizations] Khozraschetvennyi raschet v stroitel'nykh organizatsiiakh. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 148 p. (MIRA 14:2)

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REKITAR, Ya.A.; POPOV, A.N., red.; IL'IN, V.M., red.; MALYUGIN, V.I., red.; MASLOV, N.A., red.; USPENSKIY, V.V., red.; LEYKIN, B.P., red.; SHASS, M.Ye., red.; MORSKOY, K.L., red.izd-va; GILENSON, P.G., tekhn.red.

[Economic efficiency of the reorganization of wall-panel plants; conversion of operating plants to the output of modern types of production] Ekonomicheskaia effektivnost' rekonstruktsii predpriiatii stenovykh materialov; perevod deistvuiushchikh zavodov na vypusk progressivnykh vidov izdelii. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 79 p. (MIRA 14:3)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Popov).
(Walls)

IL'IN, Valentin Mikhaylovich; MAYEVSKIY, I.V., doktor ekonom. nauk, red.; PRAVKIN, G.A., red.; POPOV, N.D., tekhn. red.

[Faster, better, cheaper!; Prefabrication techniques in capital construction] Bystree, luchshe, deshevle!; industrializatsiia kapital'nogo stroitel'stva. Pod red. I.V.Maevskogo. Moskva, Sovetskaia Rossiia, 1960. 86 p. (MIRA 15:8)
(Construction industry)

YEVROPIN, Vladimir Sergeyevich; REPENKO, A.T., red.; IL'IN, V.M., red.; MALYUGIN, V.N., red; MASLOV, N.A., red. [deceased]; USPENSKII, V.V., red.; LEYKIN, B.P., red.; SHASS, M.Ye., red.; KUTSENOVA, A.A., red.izd-va; IGNAT'YEV, V.A., tekhn.red.

[Basic problems in the organization of the administration of construction] Osnovnye voprosy organizatsii upravleniia stroitel'stvom. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1961. 96 p. (MIRA 14:6)
(Construction industry)

KVITNITSKIY, Leonid Antonovich; ZHUK, A.A., nauchnyy red.; KL'IN, V.M., red.; KAPSIN, A.S., red.; LEVKIN, B.P., red.; MALYUGIN, V.I., red.; USPENSKIY, V.V., red.; SHASS, M.Ye., red.; MORSKOY, K.L., red.izd-va; GARNUKHIN, Ye.K., tekhn.red.

[Transportation expenses in construction and ways to lower them] Transportnye raskhody v stroitel'stve i puti ikh snizheniia. Izd.2., dop. i perer. Moskva, Gos.izd-vo lit-ry po stroit. materialam, 1961. 105 p. (MIRA 14:12)
(Materials handling)
(Construction industry--Costs)

GALKIN, I.G.; KAZANSKIY, B.M., nauchnyy red.; ILI'IN, V.M., red.; MALYUGIN, V.I., red.; KATSIN, A.S., red.; USPENSKIY, V.V., red.; LEYKIN, B.P., red.; SHASS, M.Ye., red.; GLAZUNOVA, Z.M., red. izd-va; BOROVNEV, N.K., tekhn. red.

[Problems of rythm and operation completion in construction] Voprosy ritmichnosti i zadela v stroitel'stve. Moskva, Gosstroiizdat, 1962. 168 p. (MIRA 15:9)
(Construction industry)

KOPNYAYEV, V.P., dots.; MASSAKYGIN, F.S., dots.; MANZHEYEV, D.N., dots.; KOPNYAYEV, V.P., dots.; USATOV, I.A., kand. ekonom. nauk; IL'IN, V.M., dots.; KOLYAKOV, D.S.; MOTOV, S.I., dots.; KONOTKOVA, L., red.; MEDVEDEVA, R., red.; TELEGINA, T., tekhn. red.

[Analysis of the financial and economic operations of enterprises]Analiz finansovo-khoziaistvennoi deiatel'nosti predpriiatii. Pod obshchei red. Kopnyayeva. Moskva, Gosfinizdat, 1962. 357 p. (MIRA 15:12)
(Finance) (Industrial management)

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S/143/60/000/004/002/007
A163/A026

9.2530

AUTHORS: Il'in, V.M.; Bladyko, V.M.; - Engineers

TITLE: Non-Hysteresis Magnetization of Ferromagnetics With the Help of a Natural Oscillator

PERIODICAL: Energetika, 1960, No. 4, pp. 27 - 33

TEXT: The article deals with the non-hysteresis magnetization of ferromagnetics with the help of a natural oscillator. The author presents results of experimental work carried out with a damped ferro-resonance oscillator, and an installation permitting one to obtain non-hysteresis and primary magnetization curves. V.M. Il'in recommends an oscillator (Fig. 1) whose operation is based on the effect of the ferro-resonance of voltage, as a result of which the current in the chain CLL_1 (in case all other elements are switched off) has the characteristic of short pulses corresponding to each maximum network voltage. The pulse response of the power to be supplied from the source to the chain CLL_1 corresponds to the pulse response of the current. At intervals, when the current is equal or close to zero, the chain practically does not receive power. Therefore, when cutting in the capacitor C_1 parallel to the choke 4, free damped

Card 1/6

Non-Hysteresis Magnetization of Ferromagnetics With the Help of a Natural Oscillator

oscillations will arise in the chain C_1L during these intervals. As a result, the current and the voltage on the linear inductance L_1 have oscillations that use to damp in the course of each semi-period of the voltage U_1 of the power supply source. When connecting the rectifier to the secondary winding of the choke, the effect of the resonance in the circuit is produced by only one semi-period of the voltage U_1 of the network. Due to this fact, oscillations show up at the output of the oscillator, which continuously damp in the course of each period of input voltage. This is one of the most important characteristics of the oscillator in comparison to those now in operation (1). In addition, the diagram permits one to regulate continuously the extent of automatic oscillation damping by changing R and R_1, and also the maximum amplitude of damped oscillations (by changing the capacitance C) and the frequency of oscillations (by changing the capacitance C_1). The capacitor C_2, connected to the output of the oscillator, limits the current of the power source frequency and enables to establish resonance conditions in the circuit of the inductive load on the frequency of damped oscillations. This increases the efficiency of the oscillator operation. A diagram of a ballistic installation for obtaining an ideal magnet-

Non-Hysteresis Magnetization of Ferromagnetics With the Help of a Natural Oscillator

ization curve with the help of a natural oscillator is presented in Figure 3. The model consists of two similar cores O. Each of the core has three windings: a magnetizing one W_1 serving for establishing a constant field and also for demagnetizing the model; the winding W_2 necessary for obtaining a damped magnetic field in the installation; and the measuring winding W_3. To eliminate the effect of the damped alternating field on the magnetizing and measuring circuit, the windings W_2 are closely connected. At the beginning of experiments, the measuring circuit is opened and the installation is demagnetized with the help of the РУ (RU) demagnetization device, which is an autotransformer or a choke with an adjustable air gap. Then, a damped magnetic field is established in the installation with the help of the ГА (GA) natural oscillator. The maximum amplitude and type of current of the oscillation is controlled by the ЭО (EO) electron oscillograph. Thereupon, the magnetizing circuit is locked with the switch П (P) and a corresponding value of the magnetizing current is supplied to the winding W_1. According to the key kick of the БГ (BG) galvanometer, the unknown (iskomaya) induction is determined on the optimum magnetization curve, i.e.,

$$B_1 = \frac{C_b}{2 s w_3} \alpha [gs],$$

Card 3/6

Non-Hysteresis Magnetization of Ferromagnetics With the Help of a Natural Oscillator

where s = section of one core of the installation, cm^2; w_3 = number of coils of the measuring winding; α = key kick of the light spot in scale mm; C_b = ballistic constant of the galvanometer. To determine the ballistic constant of the galvanometer, a pattern-type mutual induction coil M is used. Then, the calibration current I_1 is passed through the primary winding of the coil. When locking or opening the key K_2, the magnitude of the ballistic key kick is read. The ballistic constant is determined by the formula

$$C_b = \frac{MI_1}{\alpha_1} \cdot 10^8 \ [\mu sec/mm],$$

where M = mutual induction of the pattern coil, gn. The recommended diagram of the natural oscillator permits one to perform non-hysteresis magnetization of ferromagnetics. The application of natural oscillations which damp the network voltage in the course of time is more effective than half-wave oscillations. There are 6 figures and 6 references: 4 Soviet and 2 German.

ASSOCIATION: Belorusskiy politekhnicheskiy institut (Belorussian Polytechnical Institute)

PRESENTED: by the Department for Theoretical Principles of Electrical Engineering

Card 4/6

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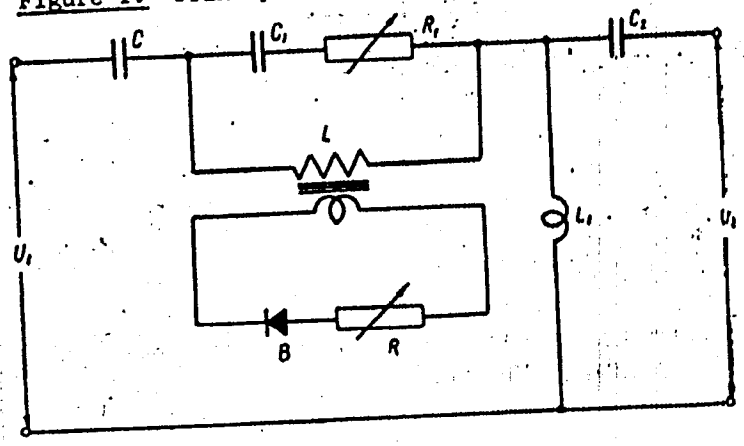
Non-Hysteresis Magnetization of Ferromagnetics With the Help of a Natural Oscillator

Figure 1: Principle diagram of a natural oscillator. 1 - choke with secondary winding; 2 - linear inductance L_1, the value of which is considerably lower than the maximum value of the induction choke; 3 - capacitances C, C_1 and C_2; 4 - adjustable resistances R and R_1; 5 - semi-conductor valve B.



Card 5/6

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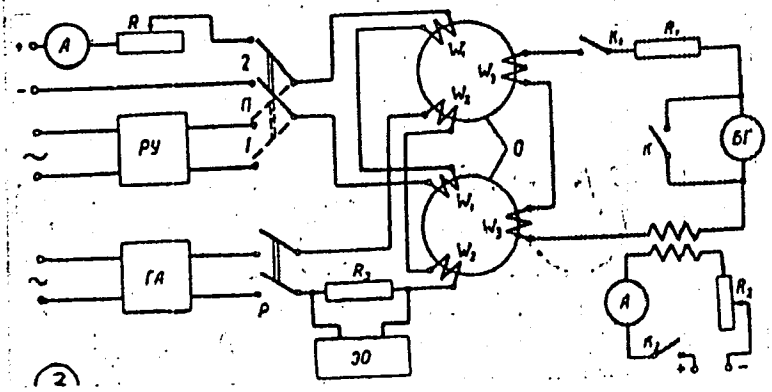
Non-Hysteresis Magnetization of Ferromagnetics With the Help of a Natural Oscillator

Figure 3: Diagram showing principle of an installation for obtaining non-hysteresis and primary magnetization curves.



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IL'IN, V.M

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AUTHOR: Bladyko, V.M. Candidate of Technical Sciences, and Il'yin, V.M., Engineer

TITLE: The influence of some factors on hysteresis-less magnetization of ferro-magnetic materials

PERIODICAL: Vysshiye uchebnyye zavedeniya. Izvestiya. Energetika, no. 8, 1960, 49-54

TEXT: The author briefly explains the influence of amplitude, frequency, degree of damping and some other factors on obtaining a hysteresis-less magnetization of ferromagnetic materials using a simultaneous action of d.c. and of damped oscillating fields. The method of obtaining a hysteresis-less magnetization curve using a ferroresonance generator differed from the existing methods in the way of the measuring the induction on a hysteresis-less curve. A peculiarity of this method was that it was designed to obtain a periodical damped

Card 1/5

The influence of...

field in a sample, whose magnetic properties were to be measured. The frequency, the amplitude and the degree of the damping influence the coefficient of increase of induction K which is a ratio of induction B_u of the hysteresis-less curve to the induction B of the initial magnetization curve. The author found the maximum value of k of the order of 130 at 1200 cps, at const. intensity of the d.c. field of $H=8.10^{-5}$ oersted. for μ_0 - permalloy (μ_a = 20,000, μ_r = 75,000) (Fig. 1). The variation of values of k is explained by the author by the fact that the number of the magnetizing cycles increased with frequency, but the depth of penetration of the damped field decreased, and the eddy currents increased. The influence of the damping of oscillations was investigated by the author, who found that the best result was obtained with the oscillations damped in 1/3 of the period T(T=0.02 secs). The magnitude of the amplitude had the same influence on the coefficient k for permalloy as for steel Э 42 (E42). With the increase of amplitude the coefficient k first increases then decreases. For each value of the d.c. field there is a definite value of amplitude of the damped field. The

Card 2/5

The influence of...

influence of the amplitude is greater for the weak d.c. fields. The coefficient of increase of induction k, for a sample of permalloy in the form of coiled tape, was found to be much smaller than for a ring sample. The discrepancy was bigger for a weak d.c. field, showing the influence of the air gap. The hysteresis-less curve was taken in step values of the d.c. current from zero up to a given value and also at the variation of this current, from this value to zero, in the opposite direction. This was achieved by using a system of rheostats $R_1 - R_5$ and a make-before break switch. The hysteresis-less curves taken with step-like changes of the d.c. current were fully repeatable and coincided. This showed that there was a univalued dependence of the induction B_u on a hysteresis-less curve from the voltage H taken with the d.c. and that there was a sufficient accuracy of the measurements and a possibility of the hysteresis-less magnetization with the d.c. This system differed from the earlier suggested systems in the generation made of the damped field and in the technique of measurements. The system consisted of a generator of the damped oscillations

Card 3/5

The influence of...

and of two identical permalloy cores, the latter having three windings; the windings of the input and output signals W_1 and W_2, connected cummulatively, and of the winding W_3 fed from the generator of the oscillations and connected in opposition. At the switching-on of the d.c. a ballistic galvanometer deflects on a number of divisions k times that number in the absence of a damped field. The sensitivity of the circuit increases with the decrease of the input signal current. There are 6 figures and 8 references: 7 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Belorusskiy politekhnicheskiy institut (Belorussian Polytechnic Institute)

PRESENTED: By Kafedra teoreticheskikh osnov elektrotekhniki (Department of Theoretical Electrotechnics).

SUBMITTED: January 21, 1960

24201

S/143/61/000/006/001/003
D253/D301

24.2200

AUTHORS: Bladyko, V.M., Candidate of Technical Sciences, and Il'in, V.M., Engineer

TITLE: An oscillographic method of controlling magnetic properties of high frequency ferromagnetic materials

PERIODICAL: Energetika, no. 6, 1961, 1 - 5

TEXT: This paper describes a method of obtaining the magnetization curve and the hysteresis loop on an oscillograph screen. This method is most suitable for a continuous control of magnetic characteristics in magnetic materials and cores in production. The equip-ment requires a ferro-resonance periodical damped oscillation generator. The life of this arrangement is practically infinite. The working frequency is 1000 cycles and therefore it is used for examining high frequency steel, ferrites and for making cores of identical magnetic properties, in which the eddy current losses are small at this frequency. The set-up consists of a damped oscilla-

Card 1/5

the magnetizing current of L_2 and consequently controls the length and the phase of the pulse. The values of R_5 and C_5 greatly affect the phase of the pulses. In this way any part of the cycle can be selected to appear on the screen. The damped oscillations are applied to the winding w_1 of the sample. During one period T the inductance of the sample varies from zero to saturation (the beam traces the fundamental magnetization curve). Since the second and the third amplitudes of oscillations are greater than the first one, the inductance in the sample changes along the major hysteresis cycle and then along the smaller cycles drops to zero causing a complete demagnetization of the sample. To prove the accuracy of this method the magnetization curve was obtained by using this method side by side with a ballistic method. The agreement was sufficiently good. The maximum error using the above method does not exceed 8 %. There are 6 figures and 7 Soviet-bloc references.

Card 3/5

24201
S/143/61/000/006/001/003
D253/D301

An oscillographic method ...

ASSOCIATION: Belorusskiy politekhnicheskiy institut (Belorussian Polytechnic Institute)

PRESENTED: December 30, 1960 by the Kafedra teoreticheskikh osnov elektrotekhniki (Department of the Theoretical Bases of Electrical Engineering)

Card 4/5

NAKHABIN, V.P.; MIKULINSKIY, A.S.; SHIRER, G.B.; NEVSKIY, R.A.; SHOLOKHOV, V.F.; YEFREMKIN, V.V.; ZHUCHKOV, V.I.; KURNUSHKO, O.V.; EPSHTEYN, N.Ye.; PANFILOV, S.A.; Prinimali uchastiye: IL'IN, V.M.; ZEMLYAKOV, V.V.; SHMULEVICH, Ye.Ya.

Smelting out manganese-silicon and ferromanganese from Polunochnoye deposit ores in a furnace with a power of 10,500 kilovolt-amperes. Trudy Inst. met. URAN SSSR no.7:127-145 '61. (MIRA 16:6)
(Manganese alloys) (Sintering)

S/716/61/018/000/015/019
D207/D301

AUTHOR: Il'in, V. M.

TITLE: A null indicator for alternating-current balancing circuits used in high-frequency testing of ferromagnetic materials

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut elektrotekhniky. Sbornik trudov, v. 18, 1961. Voprosy magnitnykh izmereniy, 111-114

TEXT: The author describes a null indicator for bridge and compensation circuits used in measuring ferromagnetic properties at high frequencies. The indicator consists of a three-stage transistor amplifier with an indicating meter. The transistors are of the П-133А (P-133A) type in grounded-emitter circuits. The second and third harmonics produced by a ferromagnetic sample are attenuated by 55 - 65 dB by means of suitable filters. The working range of the indicator is 400 - 20,000 c/s covered in five frequency

Card 1/2

A null indicator ...

S/716/61/013/000/015/019
D207/D301

ranges. The overall maximum sensitivity of the indicator is 1 mm of scale per microvolt. Its input impedance varies from 5,000 ohm at high sensitivity to 10,000 ohm at low sensitivity. Ambient temperature variations are compensated by means of a thermistor MMT-6 (MMT-6) which is used to control the bias voltage of the transistor bases. This ensures stability of the amplification factor which varies not more than 0.3% per 1 deg C. The power is obtained from a stabilized rectifier fed from 50 c/s 127 V or 220 V mains. The indicator consumes 3 mA at 10 V d.c. There are 1 figure and 3 Soviet-bloc references.

Card 2/2

makes possible an estimation of the limiting operating conditions when the losses in the circuit elements decrease. An approximate solution of the non-linear differential equation describing the oscillator processes is sought in the form

$$y = y_1 \cos \tau + y_3 \cos 3\tau, \qquad (13)$$

where y_1 and y_3 are proportional to amplitudes of the first and third harmonic of the choke flux linkage. The first and third harmonic prevail in the choke voltage and consequently they will prevail in the flux linkage. Taking into account the harmonic composition of

$$(y_1 \cos \tau + y_3 \cos 3\tau)^n \qquad (15)$$

one obtains two algebraic equations which express the dependence of y_1 and y_3 on the amplitude of the voltage applied to the oscillator, for a given degree of approximation of the magnetization

S/143/62/000/009/001/003
Design of a ferro-resonance ... D238/D308

SUBMITTED: November 20, 1961

Card 4/4

BLADYKO, V.M., kand.tekhn.nauk; ZGIROVSKIY, M.Z., inzh.; ILYIN, V.M., inzh.

Simplified method for the harmonic analysis of periodic functions. Izv. vys. ucheb. zav.; energ. 6 no.3[illegible]-29 Mr '63. (MIRA 16:5)

1. Belorusskiy politekhnicheskiy institut. Predstavlena kafedroy elektrotekhniki.

(Electric networks) (Harmonic analysis)

BLADYKO, V.M., kand.tekhn.nauk; ZGIROVSKIY, M.Z., inzh.; IL'IN, V.M., inzh.

Use of a simplified harmonic analysis method for calculating electric networks with steel. Izv. vys. uchob. zav.; energ. 6 no.5:109-112 My '63. (MIRA 16:7)

1. Belorusskiy politekhnicheskiy institut. Predstavlena kafedroy elektrotekhniki Belorusskogo politekhnicheskogo instituta.
(Electric networks)

IL'IN, V.M.

Balancing indicator for electric measuring circuits. Izm.tekh. no.11:40-42 N '63. (MIRA 16:12)

BR

ACCESSION NR: AT4035414 S/0000/63/000/000/0218/0219

AUTHOR: Il'in, V. M.

TITLE: Testing the magnetic properties of ferromagnetic materials with an oscillograph

SOURCE: Vsesoyuznoye soveshchaniye po ferritam i po beskontaktny*m magnitny*m elementam avtomatiki. 3d, Minsk. Ferrity* i beskontaktny*ye elementy* (Ferrites and noncontact elements); doklady* soveshchaniya. Minsk, Izd-vo AN BSSR, 1963, 218-219

TOPIC TAGS: magnetism, ferromagnetism, ferrite, magnetic core storage, oscillograph

ABSTRACT: The testing device includes an EO-7 oscillograph, an oxyfer-1000 ferromagnetic sample with an integrating circuit and a new unit consisting of two ferroresonance generators. The first generator consists of a nonlinear choke (L_1), a linear inductance L (considerably lower than that of the choke), capacitors (C, C_1, C_2), resistances (R_1, R_2), and a semiconductor valve (B_1). A 1000 cps voltage, damping in time T, is created at the generator's outlet when the T-period grid voltage is fed into the generator. The second generator consists of a choke (L_2), capacitors (C_4, C_5), a neon tube (N), a valve (B_2) and resistances (R_5, R_6, R_7). Periodical pulses are generated at the generator's outlet when the T-period voltage is fed in. The pulse polarity is controlled by the valve B_2 and the

Card 1/3

ACCESSION NR: AT4035414

phase — by varying R_5, R_6 and C_5. Feeding damping oscillations into the magnetizing coil of a ferromagnetic sample causes the inductance of the sample to fluctuate, thus producing images of the initial magnetization curve, the ultimate hysteresis loop, and individual cycles on the oscillograph screen. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 04Dec63 DATE ACQ: 07May64 ENCL: 01

SUB CODE: DP, EM NO REF SOV: 000 OTHER: 000

Card 2/3

L 31574-66 EWT(1) GD

ACC NR: AT6008385 SOURCE CODE: UR/0000/65/000/000/0114/0118

72
8+1

AUTHOR: Il'in, V.M.

ORG: Institute of Electrodynamics, AN UkrSSR (Institute elektrodinamiki AN UkrSSR)

TITLE: An infrared, semiconductor, continuous optical pyrometer 15

SOURCE: AN UkrSSR. Povysheniye tochnost' i avtomatizatsiya izmeritel'nykh sistem (Automating and increasing the accuracy of measuring systems). Kiev, Naukova dumka, 1965, 114-118

TOPIC TAGS: IR pyrometer, IR photoconductor, semiconductor device, temperature measurement

ABSTRACT: The paper describes a semiconductor optical pyrometer operating in the near infrared region. Following a brief exposition of the conventional theoretical relationship, the author describes the design and operation of the semiconductor device using silicon photodiodes incorporated within a four-arm bridge circuit. The 1,000--3,000K temperature range is covered (in two subranges) by an electronic automatic recorder. The relative error does not exceed +2.5%, the sensitivity is $2.5 \cdot 10^3$ μV/degree. The device is capable of measuring the temperature of a gas-oxygen flame and the temperature of molten metals. It is currently in use at the Institute for Gases of the AN UkrSSR (Institut gaza AN UkrSSR) and at the Institute of Electrical Welding im. Ye. O. Paton AN UkrSSR (Institute elektrosvarki

Card 1/2

L 31574-66

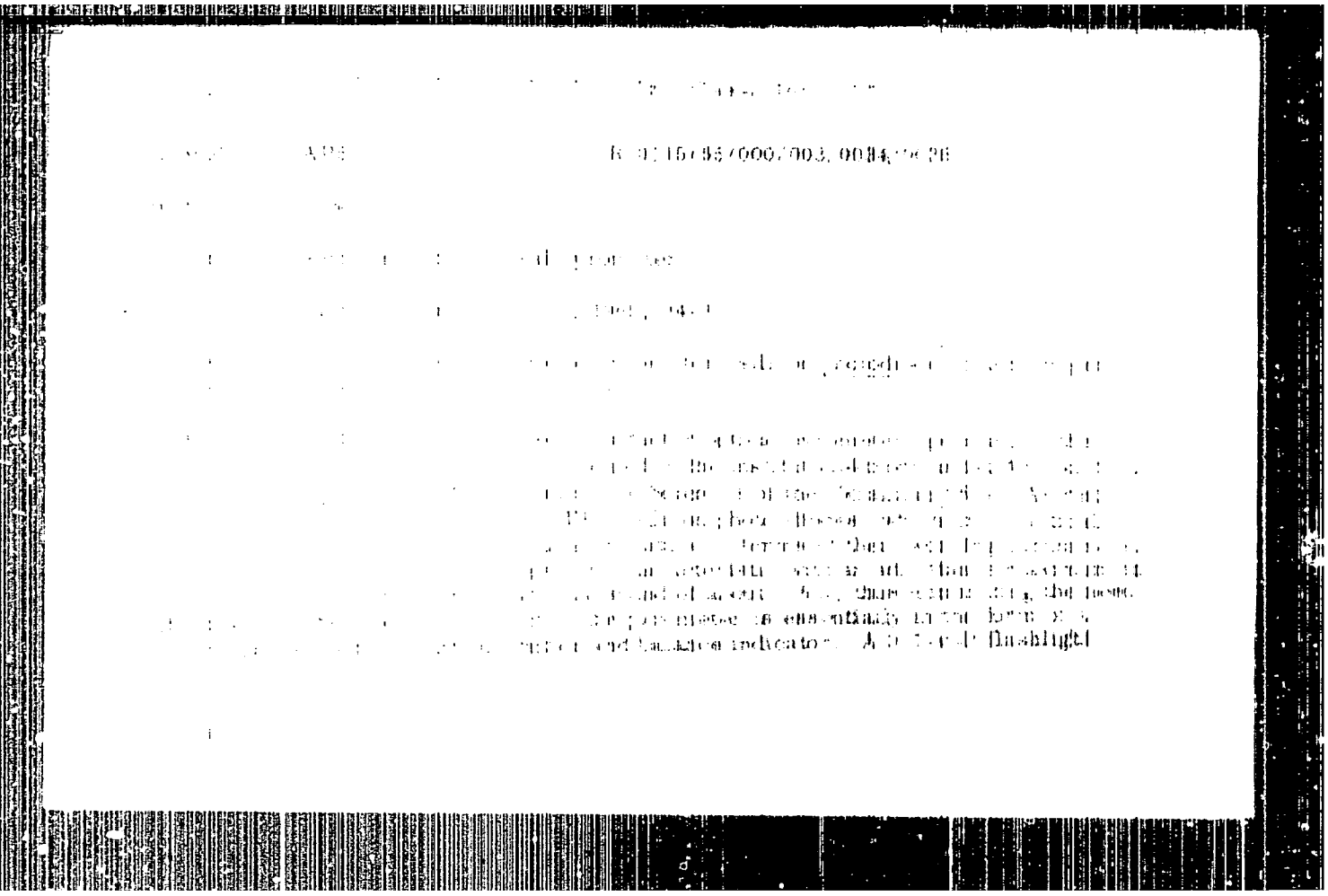
"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000618510004-6"

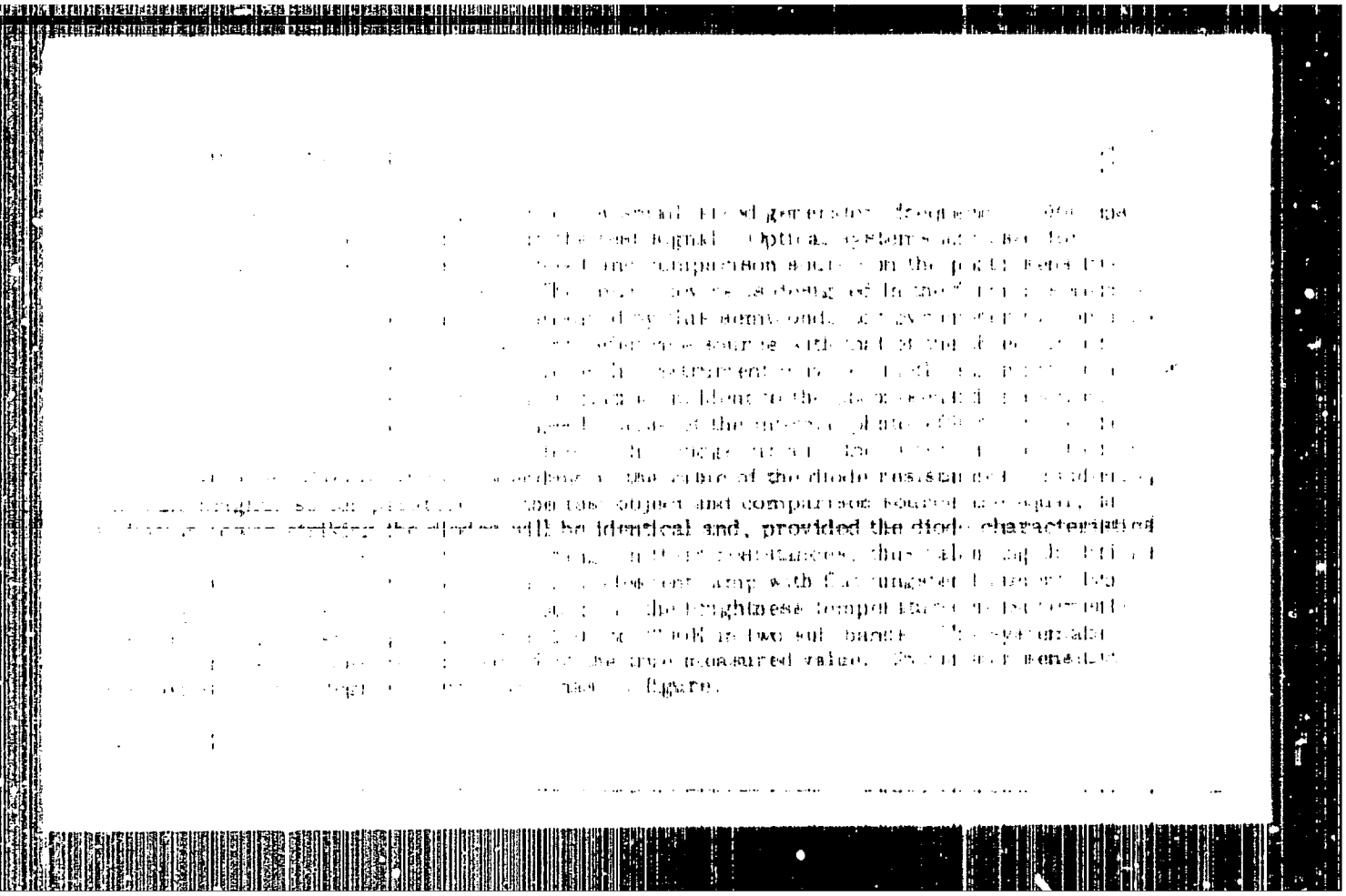
L 31574-66
ACC NR: AT6008385

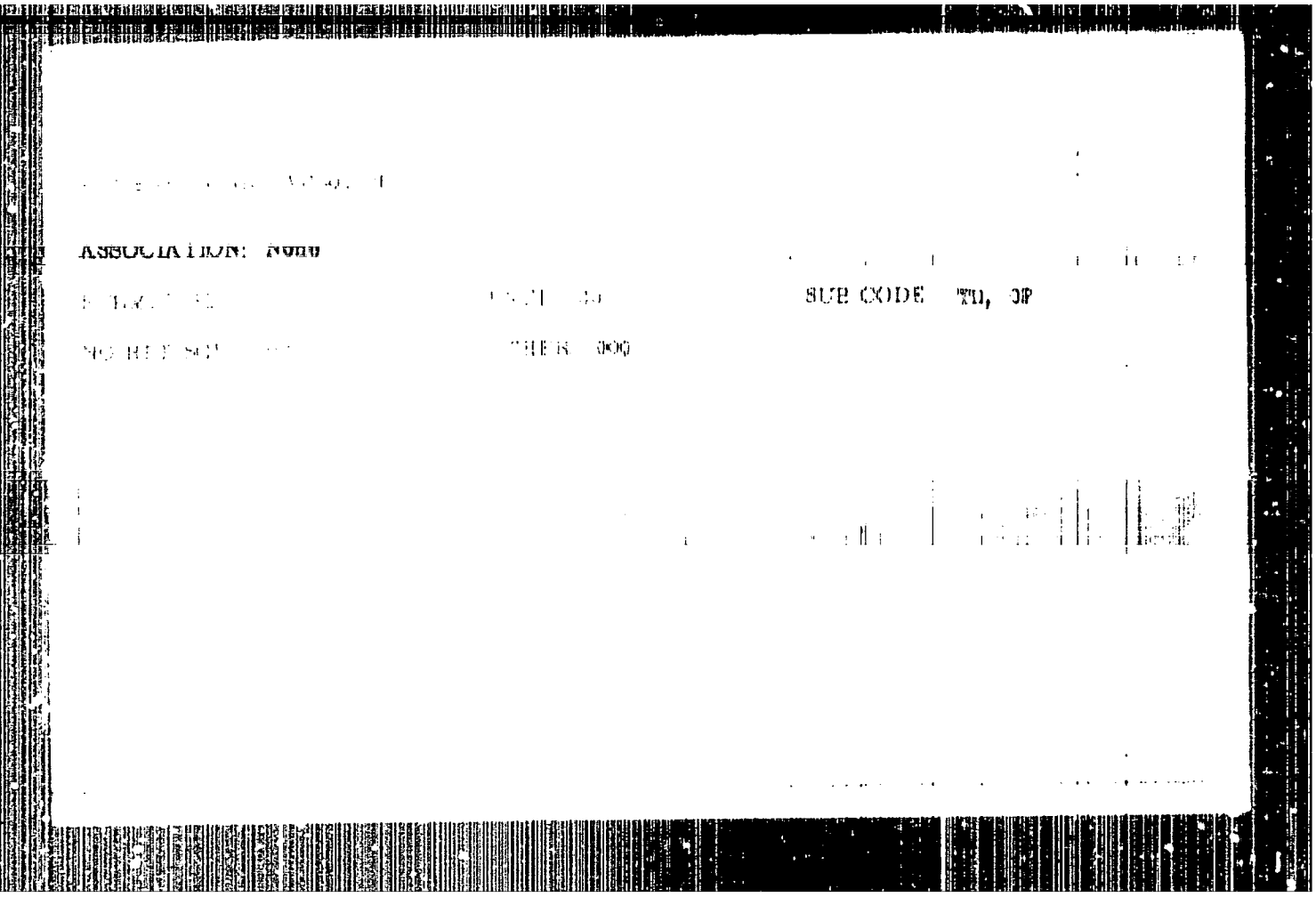
AN UkrSSR). Orig. art. has: 3 formulas and 4 figures.

SUB CODE: 14 / SUBM DATE: 25Oct65 / ORIG REF: 001 / OTH REF: 001

Card 2/2 LC







ASSOCIATION: None

SUB CODE VG, OP

IL'IN, V.N.; NAZAROV, S.S.; FRENKEL', I.B.; PELEVIN, S.N.; PREOBRAZHENSKAYA, I.N.

Scouring woolen fabrics in water under pressure. Tekst.prom. 17 no.12:46-49 D '57. (MIRA 11:1)

1.Zamestitel' predsedatelya Kryanskogo sovnarkhoza (for Il'nin). 2.Direktor fabriki "Proletariy" (for Nazarov). 3.Glavnyy inzhener fabriki "Proletariy" (for Frenkel') 4.Direktor Kuntsevskoy sherstyanoy fabriki (Pelevin). 5.Glavnyy inzhener Kuntsevskoy sherstyanoy fabriki (for Preobrazhenskaya).

(Woolen and worsted manufacture)

IL'IN, V.P., kandidat meditsinskikh nauk.

Do you know how to relax? Nauka i zhizn' 22 no.1:24-25 Ja'55. (MLRA 8:2)
(Recreation)

S/264/62/000/006/008/008
I064/I242

AUTHORS: Fridkin, A.Ya., Il'in, V.P., Terekhov, V.S.

TITLE: Hangar building for line operation and repair shops

PERIODICAL: Referativnyy zhurnal, Vozdushnyy transport. Svodnyy tom, no.6B, 1962, 18, abstract 6B95. (Prom. str-vo, no.12, 1961, 22-26)

TEXT: It is reported that in the SKO GPI (SKO GPI) department of the Leningrad industrial building project a typical hangar design was developed for line operation, maintenance and repair shops, for technical service routine and basic repair of aircraft. The technological part of the project is worked out by the Air project institute. The hangar building contains a one-floor hangar and a three-floor section which accomodates laboratories, service and administration rooms.

[Abstracter's note: Complete translation.]

Card 1/1

RAZIKOV, M.I.; Prinimali uchastiye: KHOVANETS, V.K., inzh.; KULISHENKO, B.A., inzh.; IL'IN, V.P., inzh.

New techniques for automatic hard facing in an atmosphere of carbon dioxide. Avtom. svar. 15 no.6:33-38 Je '62. (MIRA 15:5)

1. Ural'skiy politekhnicheskiy institut imeni S.M.Kirova.
(Hard facing) (Protective atmospheres)

PETROV, P.S., dots.; BORISKIN, S.V., dots.; VASILENKO, N.A., starshiy prepod.; GERSHANOV, Ye.M., dots.; DEMENT'YEVA, A.N., starshiy prepod.; IL'IN, V.P., dots.; NIKITIN, D.P., starshiy prepod.; NIKITIN, D.P., starshiy prepod.; SHRAMCHENKO, K.G., starshiy prepod.; YUSHIN, V.I., starshiy prepod.; POPOV, A.S., red.; MESHALKIN, V.I., tekhn. red.

[Book of the trade-union committee chairman; aid to the factory, plant and workshop committee chairman] Kniga predsedatelia komiteta profsoiuza; v pomoshch predsedateliu fabrichnogo, zavodskogo, tsekhovogo komiteta. Moskva, Profizdat, 1962. 356 p. (MIRA 16:2)

1. Moscow. Vysshaya zaochnaya shkola profdvizheniya. 2. Kafedra "Profsoyuznoye stroitel'stvo" Moskovskoy vysshey zaochnoy shkoly profdvizheniya Vsesoyuznogo tsentral'nogo soveta profsoyuzov (for all except Popov, Meshalkin). (Trade unions--Handbooks, manuals, etc.)

S/869/62/000/000/009/012
B102/B186

21.2300

AUTHORS: Marchuk, G. I., Il'in, V. P.

TITLE: Neutron resonance capture in an annular lump

SOURCE: Teoriya i metody rascheta yadernykh reaktorov; sbornik statey. Ed. by.G. I. Marchuk. Moscow. Gosatomizdat, 1962, 191 - 199

TEXT: A method for calculating the effective resonance integral of thin lumps had been developed by Gurevich and Pomeranchuk, and one for thick lumps by Wigner. Working independently, Orlov (Atomnaya energiya 4,6,1958) and Rudik generalized these methods to apply to blocks of any thickness. Proceeding from the results of this generalization, the authors deal with problems concerning the resonance of an annular lump when the mutual shielding of the lumps is taken into account. The lump under consideration is assumed to be embedded in moderator, but absorption and retardation are disregarded. The epiresonance neutron flux is taken to be isotopic and equal to $\varphi_0/4\pi$, the moderator density constant and equal to 1. The total number of resonance absorptions is considered to be the sum of those inside the ring (region I), those within the ring itself (III) and those outside

Card 1/4

Neutron resonance capture in an ...

the ring (II): $p_j' = p_j^I + p_j^{II} + p_j^{III}$. Substituting

$$p_j^I = \frac{\varphi_0}{4\pi}\left\{\iint\limits_{G_j} ds\, d\Omega' |\Omega_n| \int\limits_{E_j-\alpha}^{E_j+\alpha} \frac{\Sigma_c \Sigma_{sn}}{\Sigma}\, dE + \iint\limits_{G_1} ds\, d\Omega' |\Omega_n| \int\limits_{E_j-\alpha}^{E_j+\alpha} \frac{\Sigma_c \Sigma_r}{\Sigma^2}(1-e^{-\Sigma l})dE\right\}, \quad (3)$$

$$p_j^{(II)} = \frac{\varphi_0}{4\pi}\left\{\iint\limits_{G_2} ds\, d\Omega' l \int\limits_{E_j-\alpha}^{E_j+\alpha} \frac{\Sigma_c \Sigma_{sn}}{\Sigma}\left(1 - \frac{1-e^{-\Sigma l}}{\Sigma_{sn} l}\right) e^{-\Sigma_s^I L}\, dE + \right.$$

$$\left. + \iint\limits_{G_2} ds\, d\Omega' |\Omega_n| \int\limits_{E_j-\alpha}^{E_j+\alpha} \frac{\Sigma_c \Sigma_r}{\Sigma^2}(1 - e^{-\Sigma l})dE\right\}. \quad (4)$$

and

$$p_j^{III} = \frac{\varphi_0}{4\pi} \iint\limits_{G_3} ds\, d\Omega' |\Omega_n| \int\limits_{E_j-\alpha}^{E_j+\alpha} \left[\frac{\Sigma_c \Sigma_{sn}}{\Sigma^2} + \frac{\Sigma_c \Sigma_r}{\Sigma^2} e^{-\Sigma l}\right](1-e^{-\Sigma l}) e^{-\Sigma_s^I L}\, dE, \quad (7)$$

Card 2/4

a series of transformations and simplifications leads to

$$p_j = \frac{1}{\left(\sum \Sigma_s\right) \bar{e}\bar{l}\bar{l}} \left\{ \left[\alpha_1 V + \alpha_2 V + \gamma_3 S \frac{\phi_2(\Sigma_{sn}\bar{l}_3)}{8\Sigma_{sn}} e^{-\Sigma_s^{I}\bar{L}} \right] \cdot \int_{E_j-\alpha}^{E_j+\alpha} \frac{\Sigma_c \Sigma_{sn}}{\Sigma} dE + \right.$$

$$+ \frac{3}{4} \left\{ \gamma_1 \phi_1(\Sigma_{sn}\bar{l}_1) R_1\left(\frac{1}{2}\Sigma_s^{II}\bar{L}_o, \frac{1}{2}\Sigma_{sn}\bar{l}_1\right) + \gamma_2 \phi_1(\Sigma_{sn}\bar{l}_2) + \right.$$

$$+ \gamma_3 \left[\phi_1(2\Sigma_{sn}\bar{l}_3) R_2\left(\frac{1}{2}\Sigma_s^{II}\bar{L}_o, \frac{1}{2}\Sigma_{sn}\bar{l}_3\right) - \right.$$

$$\left. \left. \left. - \phi_1(\Sigma_{sn}\bar{l}_3) R_1\left(\frac{1}{2}\Sigma_s^{II}\bar{L}_o, \frac{1}{2}\Sigma_{sn}\bar{l}_3\right) \right] e^{-\Sigma_s^{I}\bar{L}} \right\} \int_{E_j-\alpha}^{E_j+\alpha} \frac{\Sigma_c \Sigma_{sn}}{\Sigma^2} dE \right\}, \quad (37)$$

Card 3/4

Neutron resonance capture in an ...

$$R_k(\Sigma_s^{II}\bar{L}_o, \Sigma_{sn}\bar{l}) = \frac{\int_{E_j-\alpha}^{E_j+\alpha} \frac{\Sigma_c \Sigma_r}{\Sigma^2} \frac{1 - e^{-\Sigma_s^{II}\bar{L}_o}}{1 - e^{-\Sigma\bar{l} - \Sigma_s^{II}\bar{L}_o}} (1 - e^{-k\Sigma\bar{l}})\, dE}{\int_{E_j-\alpha}^{E_j+\alpha} \frac{\Sigma_c \Sigma_r}{\Sigma^2} (1 - e^{-k\Sigma\bar{l}})\, dE}$$

The total effective resonance integral works out at $J^{eff} = \alpha a + \gamma(S/M)b$, where S is the surface area of a cell and M the mass of uranium per cell. There are 4 figures.

Card 4/4

ACCESSION NR: AT4019043 S/0000/63/000/000/0144/0167

AUTHOR: Il'in, V. P.

TITLE: The gamma-radiation spectrum of uranium fission products. The effective absorption coefficients of the gamma-ray spectrum and their use for shielding computations

SOURCE: Voprosy* fiziki zashchity* reaktorov; sbornik statey (Problems in physics of reactor shielding; collection of articles). Moscow, Gosatomizdat, 1963, 144-167

TOPIC TAGS: nuclear reactor, reactor shielding, Gamma ray, Gamma ray shielding, uranium 235, uranium fission, Gamma ray spectrum, Gamma ray absorption coefficient, water shielding, lead shielding, concrete shielding, iron shielding

ABSTRACT: The gamma-radiation spectrum of uranium fission products was computed for a wide interval of uranium radiation times in the reactor(T = 1 - 730 days) and exposure after radiation (t = 1 sec - 730 days). The intensity of the radiation was normed for 1 kilowatt of heat emission in the uranium radiated in the reactor. The sum gamma-activity of the fission products of U^{235} as a function both of the reactor radiation time T and the exposure time t is presented in graph form. It is pointed out that, when making computatio

Card 1/3

ACCESSION NR: AT4019043

of shielding to be used against gamma-radiation, it is expedient to use the effective absorption coefficients of a broad beam of gamma-rays in the material of the shielding. This is particularly true if the sources of radiation, against which the shielding is to operate, are of complex geometrical form. The effective absorption coefficient makes allowance for the accumulation of scattered radiation. A formula is given whereby this factor may be computed for a monochromatic broad beam of gamma-rays. When using the effective absorption coefficients, sufficient accuracy is maintained in the computation of the shielding. This point is illustrated in the article by means of an example. A comparison of attenuation factors, calculated by the effective absorption coefficient method and by other techniques, confirms the accuracy of the results obtained by the method under discussion and the essential simplicity of the computation procedure. The method is to be recommended particularly for shielding computations in the case of a complex spectrum of gamma-radiation. A formula is provided in the text, on the basis of which the effective absorption factor in the shielding can be calculated if the gamma-ray spectrum is complex. Using this formula and a table of values occurring in the formulas for the computation of the dosage intensity from different sources, the effective absorption coefficients of the gamma-ray spectrum of uranium fission products in water, concrete, iron and lead were

Card 2/3

ACCESSION NR: AT4019043

determined. The results of these computations are presented in a series of diagrams. The author explains how the results of the calculation of uranium fission product activity and the effective absorption factors for the gamma-ray spectrum of the fission product can be put to use in practical problems involving the computation of shielding against radiation sources of various form "In conclusion, the author wishes to thank O. S. Kubasova and N. Ye. Ivanova for their assistance in preparing the data for the electronic computer and in processing the results of the computations." Orig. art. has: 3 tables, 8 formulas, and 11 figures.

ASSOCIATION: none

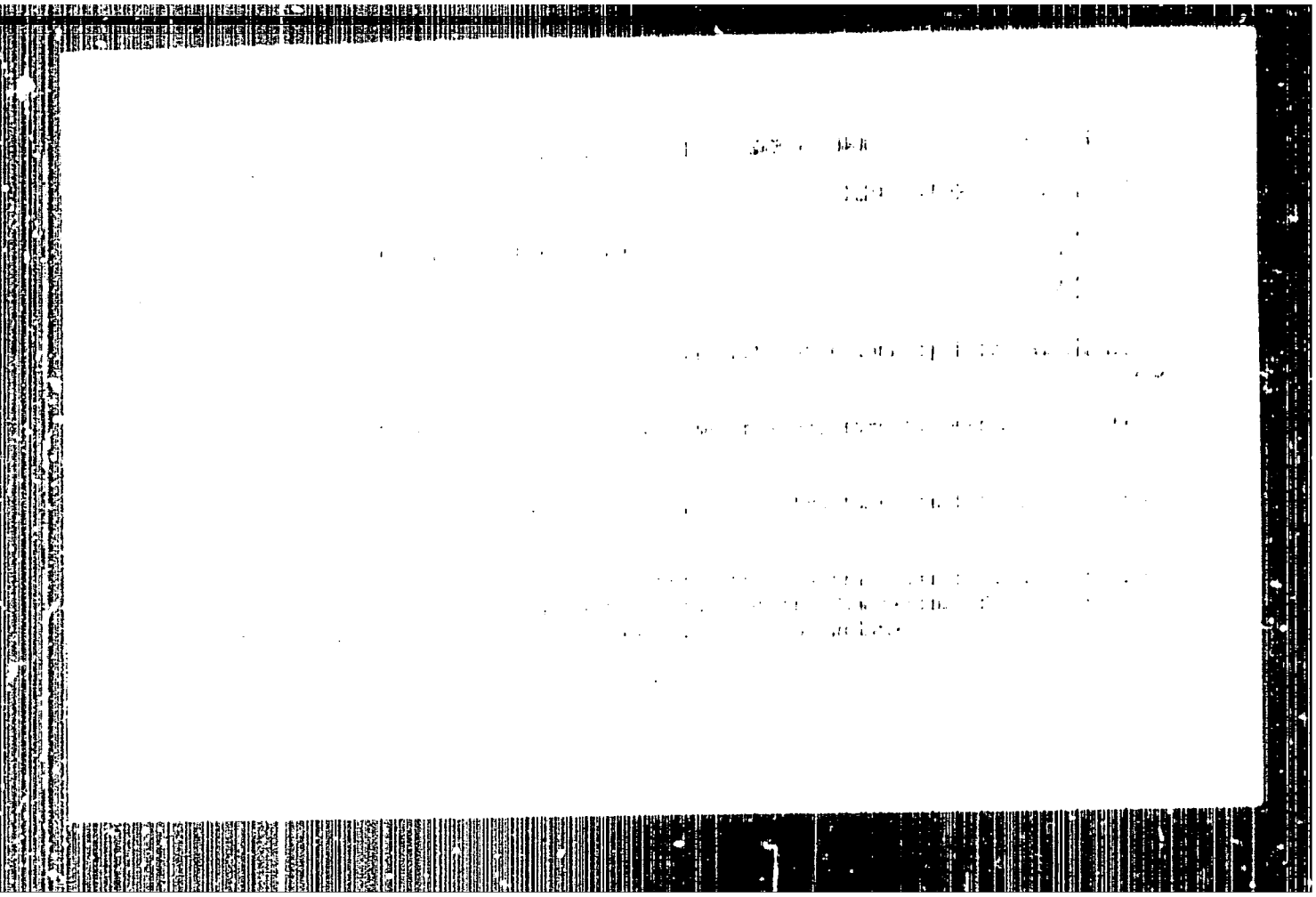
SUBMITTED: 14Aug63 DATE ACQ: 27Feb64 ENCL: 00

SUB CODE: NP NO REF SOV: 001 OTHER: 002

Card 3/3

KULISHENKO, B.A.; KOCHEVA, G.N.; MILICHENKO, S.L.; IL'IN, V.P.; CHERNYAK, V.S., inzh., retsenzent

[Hard facing of metals; a worker's pocket handbook] Naplavka metallov; karmannyi spravochnik rabochego. Moskva, Izd-vo "Mashinostroenie," 1964. 130 p. (MIRA 17:7)



IL'IN, V.P., inzh. (Tashkent)

Use of rotary regenerator heat exchangers in the hot-air heating and air-conditioning systems in the United States. Vod. i san. tekh. no.8:37-39 Ag '65. (MIRA 18:12)

L 11511-66 EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) MJW/JD/WB

ACC NR: AP6003286 (N) SOURCE CODE: UR/0135/66/000/001/0029/0029

AUTHOR: Razikov, M. I. (Candidate of technical sciences); Il'in, V. P. (Engineer); Dubinin, L. G. (Engineer); Zubchenko, M. G. (Engineer); Izraylevich, I. I. (Engineer)

ORG: [Razikov, Il'in] UPI im. S. M. Kirov ; [Dubinin, Zubchenko] Taimlyanskaya GES; [Izraylevich] Rostovenergoremont

TITLE: Use of 30Kh10G10 cavitation-resistant steel as lining for rotor wheel chambers of hydraulic turbines

SOURCE: Svarochnoye proizvodstvo, no. 1, 1966, 29

TOPIC TAGS: steel, turbine rotor, water turbine, wear resistant metal, protective coating/ 30Kh10G10 steel

ABSTRACT: At the Taimlyanskaya Hydroelectric Power Station the rotor wheel chambers of hydraulic turbines, built of 30L steel, are subject to intensive cavitation over a depth of as much as 30 mm. Until 1962 these chambers were protected against cavitation by lining them with 18-8 type Cr-Ni steel. In 1962 during the overhaul of turbine no. 4 it was decided to experimentally line a part (9 m²) of the surface area of its rotor wheel chamber with 30Kh10G10 Cr-Mn cavitation-resistant steel. This was done by using strips with a 3x50 mm cross section, 600 mm long, mounted vertically on the chamber walls and spaced 8-10 mm apart. The strips were welded onto the walls

Card 1/3

UDC: 66.023.8

L 14511-66
ACC NR: AP6003286

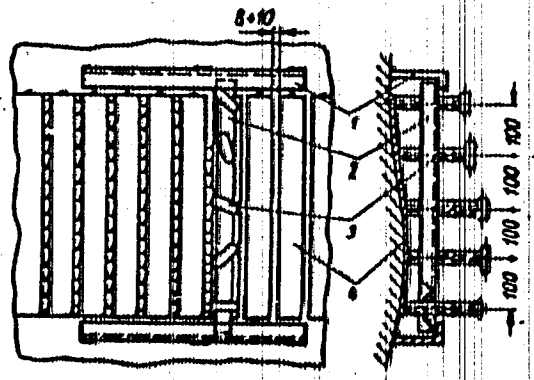


Fig. 1. Diagram of device for clamping the facing strips against the chamber wall:

1 - supporting bracket; 2 - sliding beam; 3 - clamping screw; 4 - facing strip

Card 2/3

of the chamber manually by means of UPI-30Kh10G10-2 electrodes (diameter 4 mm, reversed-polarity DC, welding current 130-150 a). A year later inspection revealed no traces of cavitational erosion or damage to the strips. Hence in 1963 the entire rotor wheel chamber (area 39 m^2) of unit no. 3 at the same hydroelectric station was lined with 30Kh10G10 steel. To improve the quality of attachment of the strips, a special clamp was used (Fig. 1). Inspection of units no. 3 and 4 performed in May 1965 showed that the 30Kh10G10-steel lining in both units was in satisfactory state: there was neither any cavitational erosion nor any rupture of the strips. At present four rotor wheel chambers at the Tsimlyanskaya Hydroelectric Power Station are lined with 30Kh10G10 steel (aggregate area of lining: 118 m^2). The replacement of 1Kh18N9T steel with 30Kh10G10 steel as the lining of rotor wheel chambers in four turbines has made it possible to save about 2.5-3.0 tons of scarce chrome-nickel steel while at the same time providing a lining with a higher cavitation resistance. Orig. art. has: 1 figure, 1 table.

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 000/ OTH REF: 000

USSR/Mathematics - Approximation 1 Jun 51

"Evaluations of Functions Possessing Derivatives Summable With Given Degree, in Hyperplanes of Various Dimensions," V. P. Il'in

"Dok Ak Nauk SSSR" Vol LXXVIII, No 4, pp 633-636

In space of n dimensions $x_1,..,x_n$, considers bounded region D with contour G, in which certain summable function $f(x_1,..,x_n)$ is given with generalized derivs (according to S. L. Sobolev) up to the order L which are summable with certain deg $p \geq 1$. Obtains certain relations among n, L, and p which generalizes those obtained by L. V. Kantorovich, S. L. Sobolev,

184T64

USSR/Mathematics - Approximation (Contd) 1 Jun 51

and V. I. Krylov. Submitted 23 Mar 51 by Acad S. L. Sobolev.

184T64

IL'IN, V. P.

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000618510004-6"

USSR/Mathematics - Variational Processes, Approximations

11 Nov 51

"Convergence of Variational Processes," V. P. Il'in, Leningrad Dept of Math, Inst imeni V. A. Steklov, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXXI, No 2, pp 137-140

Gives the conditions ensuring the uniform convergence of the minimizing sequence in the case of the soln of the linear self-adjoint 2-order eq of the elliptic type or the biharmonic eq. Submitted 27 Nov 51 by Acad V. I. Smirnov.

199T8

USSR/Mathematics

Card : 1/1

Authors : Il'in, V. P.

Title : On the theorem of enclosure for a limited exponent

Periodical : Dokl. AN SSSR, 96, Ed. 5, 905 - 908, June 1954

Abstract : Lemmas and formulas are given by which the author substantiates the enclosure theorem for a limiting exponent. The enclosure operator in this limiting case appears to be not perfectly continuous. Two references.

Institution : ....

Presented by : Academician, V. I. Smirnov, April 2, 1954

ILʼIN, V.P.

SUBJECT USSR/MATHEMATICS/Theory of functions CARD 1/2 PG- 417
AUTHOR ILJIN V.P.
TITLE The generalization of an integral inequation.
PERIODICAL Uspechi mat. Nauk 11, 4, 131-138 (1956)
reviewed 12/1956

By aid of a lemma of Sobolev (Mat. Sbornik 4, 3 (1938)) the author proves the following generalization of the inequation of Hilbert-Riesz: Let the function $f(x_1,\dots,x_m,\dots,x_n)$ be summable with p-th power in the whole space of the n variables. Let the function $g(y_1,\dots,y_m)$ be summable with q-th power in the space of the m variables. Let $p>1$, $q>1$, $\frac{1}{p}+\frac{1}{q}>1$, $m\leqslant n$. Then there exists the integral

$$J=\overbrace{\int\cdots\int}^{(n+m)\text{ times}}\frac{f(x_1,\dots,x_m,\dots,x_n)\cdot g(y_1,\dots,y_m)}{r^{\lambda}}\,dx_1\dots dx_n\,dy_1\dots dy_m,$$

where

$$r=\sqrt{\sum_{i=1}^{m}(x_i-y_i)^2+\sum_{i=m+1}^{n}x_i^2},\qquad \lambda=\frac{n}{p'}+\frac{m}{q'}=\frac{1}{p}+\frac{1}{p'}=1,\quad \frac{1}{q}+\frac{1}{q'}=1.$$

This integral satisfies the inequation

$$J \leq K(m,n,p,q)\left[\overbrace{\int\cdots\int}^{n \text{ times}} |f(x_1,\ldots x_n)|^p \, dx_1\ldots dx_n\right]^{1/p} \cdot \left[\overbrace{\int\cdots\int}^{n \text{ times}} |g(y_1\ldots y_m)|^q dy_1\ldots dy_m\right]^{1/q} \cdot$$

Here $K(m,n,p,q)$ is a constant independent of f and g, where

$$K(m,n,p,q) \leq \left[\frac{m}{\sigma_m}\right]^{\left(1-\frac{1}{p'}-\frac{1}{q'}\right)} \left[\overbrace{\int\cdots\int}^{n-m} \frac{dt_1\ldots dt_{n-m}}{\left(\sqrt{1+t_1^2+\ldots+t_{n-m}^2}\right)^{\lambda p'}}\right]^{1/p'} \times$$

$$\times \left[\overbrace{\int\cdots\int}^{m} \frac{\left(\sqrt{t_1^2+\ldots+t_m^2}\right)^{-\frac{m}{p}} dt_1\ldots dt_m}{\left(\sqrt{(t_1-1)^2+t_2^2+\ldots+t_m^2}\right)^{m\left(\frac{1}{p'}+\frac{1}{q'}\right)}}\right]$$

σ_m - surface of the unit sphere of the m-dimensional space.

IL'IN V.P.

SUBJECT USSR/MATHEMATICS/Theory of functions
AUTHOR ILJIN V.P.
TITLE On the convergence of the function sequences in some functionspaces.
PERIODICAL Uspechi mat.Nauk 12, 1, 192-195 (1957)
reviewed 5/1957

Let $\{u_i(x_1,\dots,x_n)\}$ $(i=0,1,\dots)$ be a sequence of continuous functions being defined in the n-dimensional domain D and having continuous derivatives up to the l-th order which are summable in p-th power $(p \geq 1)$. Let the domain D have the property that in every point of D the vertex of an n-dimensional spherical sector of constant radius and form can be laid such that the whole sector lies in D. Let here H be the greatest radius being possible. It is stated that there are valid the following estimations:

$$(1) \qquad \int_D \dots \int |u-u_i|^s \, dx_1 \dots dx_n \leq A_i^s ,$$

$$(2) \qquad \int_D \dots \int \left[\sum_{i_1,i_2,\dots i_l=1}^{n} \left| \frac{\partial^l (u-u_i)}{\partial x_i, \dots \, x_{i_l}} \right|^2 \right]^{p/2} dx_1 \dots dx_n \leq B_i^p .$$

Then the following assertions hold:

1. If $l_p > n$ $(p \geq 1)$, $\lim_{i\to\infty} A_i = 0$, $\lim_{i\to\infty} A_i^{1-\frac{n}{p}} B_i^{\frac{n}{s}} = 0$, then $\{u_i\}$ converges uniformly to u in $\overline{D}$, where from

$$\left(\frac{A_i}{B_i}\right)^{\frac{1}{1-\frac{n}{p}+\frac{n}{s}}} \leq H \quad \text{there follows} \quad \|u-u_i\|_c \leq C_1 \left(A_i^{1-\frac{n}{p}} B_i^{\frac{n}{s}}\right)^{\frac{1}{1-\frac{n}{p}+\frac{n}{s}}},$$

C_1 = const.

2. If $lp \leq n$ $(p \geq 1)$, $\lim_{i\to\infty} A_i = 0$, $\lim_{i\to\infty} A_i^{\frac{m}{q^*}+1-\frac{n}{p}} B_i^{\frac{n}{s}-\frac{m}{q^*}} = 0$, where $\max(p,s) \leq q^* < \frac{mp}{n-lp}$, $m > n-lp$, then $\{u_i\}$ converges to u in the mean with the power q^* in every D_m. D_m is the intersection of D with an m-dimensional hyperplane. If here

$$\left(\frac{A_i}{B_i}\right)^{\frac{1}{1-\frac{n}{p}+\frac{n}{s}}} \leqslant H,$$

then

$$\left[\int\limits_{D_m}^{n\text{ times}}\cdots\int |u-u_i|^{q^*}dv_m\right]^{\frac{1}{q^*}} \leqslant C_2\left(A_i^{\frac{m}{q^*}+1-\frac{n}{p}}B_i^{\frac{n}{s}-\frac{m}{q^*}}\right)^{\frac{1}{1-\frac{n}{p}+\frac{n}{s}}}.$$

3. If $lp<n$, $p>1$, $\lim\limits_{i\to\infty} A_i = \lim\limits_{i\to\infty} B_i = 0$, then there exists the assertion 2 for the exponent

$$q = \frac{mp}{n-lp},$$

where

$$\left[\int\limits_{D_m}^{n\text{ times}}\cdots\int |u-u_i|^{q}\,dv_m\right]^{\frac{1}{q}} \leqslant C_3A_i + C_4B_i .$$

Uspechi mat. Nauk 12, 1, 192-195 (1957) CARD 4/4 PG - 745

Some further theorems of convergence and estimations are obtained by adding further conditions, e.g. beside of (1) and (2) still

$$\int\limits_{D_t}^{\overbrace{\cdots\cdots}^{t \text{ times}}} \left[\sum_{i_1,\ldots i_k=1}^{n} \left| \frac{\partial^k (u-u_i)}{\partial x_{i_1} \cdots \partial x_{i_k}} \right|^2 \right]^{\frac{\nu}{2}} dv_t \leq L_i^{\nu},$$

and by variation of (1) and (2).
The results are not only valid for existing continuous derivatives but also if the derivatives are generalized functions in the sense of Sobolev.

16(1)

AUTHOR: Il'in, V.P.

TITLE: Some Functional Inequations of the Type of the Imbedding Theorems (Nekotoryye funktsional'nyye neravenstva tipa teorem vlozheniya)

SOV/20-123-6-3/50

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 6, pp 967-970 (USSR)

ABSTRACT: For functions defined in a domain D of the n-dimensional space the author gives estimations corresponding about to the imbedding theorems of Sobolev [Ref 1,2]. The distinction to the results of Sobolev consists in the fact that in Sobolev's investigations the estimation of the p-th powers of the l-th derivatives is the same for all $\Omega \subset D$; the author, however, assumes that the estimation depends on a certain positive power of the diameter of Ω. In the case $(l+\alpha)p > n$ the author's results overlap with those of Greco [Ref 3] and Nirenberg [Ref 4]. Three long theorems with estimations for continuous functions are given (the estimations are also valid for functions with generalized derivatives).
There are 4 references, 2 of which are Soviet, 1 American, and 1 Italian.

ASSOCIATION: Leningradskoye otdeleniye matematicheskogo instituta imeni V.A. Steklova Akademii nauk SSSR (Leningrad Section of the Mathematical

Card 1/2

Some Functional Inequations of the Type of the Imbedding Theorems SOV/20-123-6-3/50

Institute imeni V.A.Steklov, AS USSR)

PRESENTED: August 6, 1958, by S.L.Sobolev, Academician
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Card 2/2

Card 5/5

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sequences in various metrics is given. Using these results, conditions are formulated which guarantee the uniform convergence of minimizing sequences for functionals

$$\int_G \left(\sum_{i,j=1}^{n} a_{ij} \frac{\partial u}{\partial x_i} \frac{\partial u}{\partial x_j} + bu^2 - 2fu \right) dG + \int_\Gamma \sigma u^2 \, d\Gamma$$

(G--n-dimensional area, Γ--boundary of G). Cases where the functions of the minimizing sequences are algebraic or trigonometric polynoms are considered separately, simpler criteria of uniform convergence are given for such minimizing sequences. The formulation of the basic results is too extensive.

[Abstracter's note: Complete translation.]

Card 2/2

16(1)

AUTHOR: Il'in, V.P. SOV/20-129-5-5/64

TITLE: Some Functional Inequalities of the Imbedding Theorem Type With Weight

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 5, pp 983-985 (USSR)

ABSTRACT: Under numerous assumptions in three long theorems and three remarks the author gives weighted inequations having the character of imbedding theorems. Inequations of this kind were already given by the author [Ref 1] and others [Ref 2-4]. No proofs are given.
There are 4 references, 2 of which are Soviet, 1 Italian, and 1 American.

ASSOCIATION: Leningradskoye otdeleniye matematicheskogo instituta imeni V.A.Steklova Akademii nauk SSSR (Leningrad Section of the Mathematical Institute imeni V.A.Steklov, AS USSR)

PRESENTED: August 8, 1959, by S.L. Sobolev, Academician

SUBMITTED: June 26, 1959

Card 1/1

~~16(1)~~ 16.3500, 16.2600

AUTHOR: Il'in, V.P. SOV/20-129-6-5/69

TITLE: Some Integral Inequalities for Differentiable Functions of Many Variables

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 6, pp 1214-1217 (USSR)

ABSTRACT: The author gives integral inequalities for differentiable functions which are an analogue to the functional inequalities the author obtained in his preceding paper (Doklady Akademii nauk SSSR, 129, 983-985). The distance from a fixed point or from a hyperplane serves as weight function.
Some special cases were already formerly treated by Kh.L. Smolitzkiy [Ref 1] and others [Ref 2 - 4].
There are 6 references, 2 of which are Soviet, 3 American, and 1 German.

ASSOCIATION: Leningradskoye otdeleniye Matematicheskogo instituta imeni V.A. Steklova AN SSSR (Leningrad Department of the Mathematical Institute imeni V.A. Steklov AS USSR)

PRESENTED: August 8, 1959, by S.L. Sobolev, Academician
SUBMITTED: June 26, 1959

Card 1/1

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16.4600

AUTHOR: Il'in, V.P.

TITLE: Complete Continuity of the Imbedding Operator for an Unbounded Domain

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol.135, No.3, pp.517-519

TEXT: Let E_n be an n-dimensional Euclidean space, $\omega(X) = \omega(x_1, \ldots, x_n)$ a positive measurable function given in E; $p \geq 1$. Let $L_p(\omega; E_n)$ be the set of functions $f(X)$ given on E_n for which

$$(1) \qquad \|f\|_{L_p(\omega;E_n)} = \left[\int_{(E_n)} \cdots \int \omega |f|^p \, dX\right]^{1/p} < \infty .$$

Let l be a positive number, $\bar{l} = [l]$. Let $f(X)$ have continuous derivatives of the order $\bar{l}$. Let

$$(2) \qquad \|f\|_{L_p^{(l)}(E_n)} = \sum_{i_1,\ldots,i_{\bar{l}}=1}^{n} \left[\int_{(E_n)} \cdots \int \left(\int_{(E_n)} \cdots \int \frac{\left|\frac{\partial^{\bar{l}} f(X)}{\partial x_{i_1} \ldots \partial x_{i_{\bar{l}}}} - \frac{\partial^{\bar{l}} f(Y)}{\partial x_{i_1} \ldots \partial x_{i_{\bar{l}}}}\right|^p}{|X-Y|^{n+(l-\bar{l})p}} dY\right) dX\right]^{1/p}$$

Card 1/5

86025
S/020/60/135/003/005/039
C111/C222

Complete Continuity of the Imbedding Operator for an Unbounded Domain

form a set F' being compact in $W_q^{(s)}(E_m)$.

Theorem 2: Let F be the set of functions $f(X) \in W_p^{(1)}(E_n)$ for which it holds

(5') $\|f\|_{W_p^{(1)}(E_n)} \leq M.$

Let $\bar{s}$, m be integers, $0 \leq \bar{s} < 1$, $1 \leq m \leq n$, $q \geq p > 1$, $1 - \bar{s} + m/q - n/p > 0$. Let E_m be an m-dimensional hyperplane, $\omega(X)$ be a positive function defined on E_m satisfying the condition 1)

(10) $$\sup_{Y \in E_m} \overbrace{\int \cdots \int}^{m}_{S_H^{(m)}(Y)} \omega(X)dX < \infty, \quad \overbrace{\int \cdots \int}^{m}_{S_H^{(m)}(Y)} \omega(X)dX \to 0 \quad \text{for } |Y| \to \infty.$$

2) There exists a $\delta > 0$ so that it holds

Card 4/5

86025
S/020/60/135/003/003/039
C111/C222

Complete Continuity of the Imbedding Operator for an Unbounded Domain

(11) $$\sup_{Y \in E_m} \left(\underbrace{\int \cdots \int}_{S_H^{(m)}(Y)}^{m} \frac{\omega(X)\, dX}{|X-Y|^{[n/p+s+\delta-1]q}} \right) < \infty ,$$

where $H>0$ is a fixed number.
Then the derivatives of $\bar{s}$-th order of the functions $f \in P$, considered on the hyperplane E_m, form a set F' being compact in $L_q(\omega; E_m)$.

The author mentions A.M.Molchanov, M.Sh.Birman and B.S.Pavlov. There are 2 Soviet references.

ASSOCIATION: Leningradskoye otdeleniye Matematicheskogo instituta imeni V.A.Steklova Akademii nauk SSSR (Leningrad Department of the Mathematical Institute imeni V.A.Steklov of the Academy of Sciences USSR)

PRESENTED: June 17, 1960, by S.L.Sobolev, Academician
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Card 5/5

IL'IN, V.P.

Complete continuity of the imbedding operator for the case of an unbounded domain. Dokl. AN SSSR 135 no.3:517-519 N '60.
(MIRA 13:12)

1. Leningradskoye otdeleniye Matematicheskogo instituta im. V.A. Steklova Akademii nauk SSSR. Predst. akad. S.L.Sobolevym.
(Operators (Mathematics))

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C111/C222

16.3500

AUTHOR: Il'in, V.P.

TITLE: Some Inequalities for Differentiable Functions of Many Variables

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol.135, No.4, pp.779-782

TEXT: Let D be a region of the n-dimensional space satisfying the following condition: For arbitrary points X,Y of D for which it holds $|X-Y| \leqslant H$, where H is a fixed number not depending on X and Y, there exist n-dimensional spherical sectors of the same opening of radius $\leqslant |X-Y|$ lying entirely in D, where the measure of their common divisor is $\geqslant \lambda |X-Y|^n$, where $\lambda > 0$ is a constant number not depending on X and Y. The class of these regions is denoted by $C_H(\lambda)$.

Let s be an integer, $0 \leqslant s \leqslant m$. Let D_m be the intersection of the region D with the hyperplane $x_{m+1} = a_{m+1}, \ldots, x_n = a_n$; let D_s be the s-dimensional intersection $x_{s+1} = a_{s+1}, \ldots, x_m = a_m$, $x_{m+1} = a_{m+1}, \ldots, x_n = a_n$. Let $[D_s]^d_{m-s}$ be the set of the points $X(x_1, \ldots, x_s, x_{s+1}, \ldots x_m, a_{m+1}, \ldots, a_n)$ of the intersection D_m for which $|x_i - a_i| \leqslant d$ $(i=s+1, \ldots, m)$.

Card 1/7

S/020/60/135/004/004/037
C111/C222

Some Inequalities for Differentiable Functions of Many Variables

Let $f(x_1,\dots,x_n)$ be a continuous function defined in $D \in C_H(\lambda)$ which has continuous derivatives up to the order $l = [l]$, where $[l]$ is the integral part of l, and which satisfies the conditions 1)

$$(1) \qquad \left[\overbrace{\int\dots\int}^{n}_{(D)} |f(X)|^p dX\right]^{1/p} \leqslant A \quad (p \geqslant 1).$$

2) There exists a constant $M>0$ so that for arbitrary integral m, $0 \leqslant m \leqslant n$ and an arbitrary $d>0$ it holds:

$$(2) \quad \sup_{D_m} \sum_{i_1,\dots,i_l=1}^{n} \left[\overbrace{\int\dots\int}^{n}_{[D_m]^d_{n-m}} \left(\overbrace{\int\dots\int}^{n}_{(D)} \frac{\left|\frac{\partial^l f(X)}{\partial x_{i_1}\dots\partial x_{i_l}} - \frac{\partial^l f(Y)}{\partial x_{i_1}\dots\partial x_{i_l}}\right|^p}{|X-Y|^{n+(1-l)p}} dY\right) dX\right]^{1/p} \leqslant M d^{\mu_m}$$

if l is not integral, and

Card 2/ 7

Some Inequalities for Differentiable Functions of Many Variables

$$(2') \quad \sup_{D_m} \sum_{i_1,\dots,i_l=1}^{n} \left[\int_{[D_m]^{n-m}} \dots \int \left| \frac{\partial^l f(X)}{\partial x_{i_1} \dots \partial x_{i_l}} \right|^p dX \right]^{1/p} \leq M d^{\alpha_m}$$

if l is integral; here α_m (m=0,1,...,n) are fixed numbers and

$$(3) \quad \alpha_0 \geq \alpha_1 \geq \dots \geq \alpha_n = 0, \quad \alpha_m \leq \frac{n-m}{p}.$$

Theorem 1: Let f(X) satisfy the conditions (1)-(3) in $D \subset C_H(\lambda)$, where k is integral and $0 \leq k < l$. Then:

1) if $\varepsilon_0 = l + \alpha_0 - \frac{n}{p}$, $\varepsilon_0 - k > 0$, $0 < \beta \leq \varepsilon_0 - k$, $\beta \leq 1$, then there hold the inequalities

$$(4) \quad \left| \frac{\partial^k f(X)}{\partial x_{i_1} \dots \partial x_{i_k}} \right| \leq C_1 A h^{-k-n/p} + C_2 M h^{\varepsilon_0 - k}$$

Card 3/7

S/020/60/135/004/004/037
C111/C222

Some Inequalities for Differentiable Functions of Many Variables

(5) $$\frac{\left|\frac{\partial^k f(X)}{\partial x_{i_1}\dots\partial x_{i_k}} - \frac{\partial^k f(Y)}{\partial x_{i_1}\dots\partial x_{i_k}}\right|}{|X-Y|^{\beta}} \leqslant$$

$$\leqslant \begin{cases} C_3\left(Ah^{-k-n/p-\beta} + Mh^{\varepsilon_0-k-\beta}\right) & \text{for } \varepsilon_0-k>1 \text{ or } \varepsilon_0-k-1; \\ C_4\left(Ah^{-k-n/p-\beta} + \frac{1}{1-\beta}Mh^{\varepsilon_0-k-\beta}\right) & \text{for } \varepsilon_0-k=1,\ \beta<1; \\ C_5\left[A\mathcal{H}^{-k-n/p-\beta} + M\left(1+\left|\ln\frac{\mathcal{H}}{|X-Y|}\right|\right)\right] & \text{for } \varepsilon_0-k=1,\ \beta=1, \end{cases}$$

where h is an arbitrary positive number $\leqslant \mathcal{H}$; C_i are constants not depending on A,M,h.

2) If $0\leqslant\beta<1$, $q>p$, m - integral, $1\leqslant m\leqslant n$, $\varepsilon_m = 1+\omega_0\left(1-\frac{p}{q}\right)+\frac{\omega_m p}{q}+\frac{m}{q}-\frac{n}{p}$, $\varepsilon_m-k-\beta>0$, s - integral, $0\leqslant s\leqslant m$, $\mathcal{H}$ - an arbitrary fixed positive

Card 4/7

S/020/60/135/004/004/037
C111/C222

Some Inequalities for Differentiable Functions of Many Variables

number, $\delta = 1+\alpha_0(1-\frac{p}{q})+\alpha_s p/q+s/q-n/p-k$, then there hold the inequalities:

(6) $$I_1 = \left[\int_{[p]_{s}^{H}}^{n}\cdots\int\left|\frac{\partial^k f(x)}{\partial x_{i_1}\cdots\partial x_{i_k}}\right|^q dv_n\right]^{1/q} \leq$$

$$\leq \begin{cases} \text{a) } C_6\left(\Delta H^{(n-s)/q-\nu_h s/q+\nu-n/p-k}{}_{+MH}{}^{(n-s)/q-\mu_h\delta+\mu}\right), \text{ if } \delta>0;\ \nu,\mu \text{ are arbitrary, where } 0\leq\nu,\ \mu\leq\frac{n-s}{q}. \\ \text{b) } C_7\left[\Delta H^{(n-s)/q-\nu_h s/q+\nu-n/p-k}{}_{+MH}{}^{(n-s)/q-(\alpha_s-\alpha_h)p/q-\mu_h}\mu\left(1+\left|\ln\frac{h}{H}\right|\right)\times\right. \\ \left.\times H^{(\alpha_s-\alpha_h)p/q}\right] \text{ if } \delta=0, \text{ where } \nu,\mu \text{ are arbitrary but so that } 0\leq\nu\leq(n-s)/q,\ 0\leq\mu\leq(n-s)/q-(\alpha_s-\alpha_h)p/q. \\ \text{c) } C_8\left(\Delta H^{(n-s)/q-\nu_h s/q+\nu-n/p-k}{}_{+MH}{}^{(n-s)/q-(\alpha_s-\alpha_h)p/q+\delta-\mu_h}\mu\right) \text{ if } \delta<0, \\ \text{where } 0\leq\nu\leq(n-s)/q,\ 0\leq\mu\leq(n-s)/q-(\alpha_s-\alpha_h)p/q+\delta; \end{cases}$$

Card 5/7